Identifying small molecules that stimulate the differentiation of hESCs into dopamine-producing neurons

Grant Award Details

Identifying small molecules that stimulate the differentiation of hESCs into dopamine-producing neurons

Grant Type: SEED Grant

Grant Number: RS1-00215

Investigator:

Name:	Su Guo
Institution:	University of California, San Francisco
Type:	PI

Disease Focus: Parkinson's Disease, Neurological Disorders

Human Stem Cell Use: Embryonic Stem Cell

Award Value: $542,619

Status: Closed

Progress Reports

Reporting Period: Year 2

View Report

Grant Application Details

Application Title: Identifying small molecules that stimulate the differentiation of hESCs into dopamine-producing neurons

Public Abstract:	In this application, we propose to identify small molecule compounds that can stimulate human embryonic stem cells to become dopamine-producing neurons. These neurons degenerate in Parkinson's disease, and currently have very limited availability, thus hindering the cell replacement therapy for treating Parkinson's disease. Our proposed research, if successful, will lead to the identification of small molecule compounds that can not only stimulate cultured human embryonic stem cells to become DA neurons, but may also stimulate endogenous brain stem cells to regenerate, since the small molecule compounds can be made readily available to the brain due to their ability to cross the blood-brain barrier. In addition, these small molecule compounds may serve as important research tools, which can tell us the fundamental biology of the human embryonic stem cells.
Statement of Benefit to California:	The proposed research will potentially lead to a cure for the devastating neurodegenerative, movement disorder, Parkinson's disease. The proposed research will potentially provide important research tools to better understand hESCs. Such improved understanding of hESCs may lead to better treatments for a variety of diseases, in which a stem-cell based therapy could make a difference.